**SBI3U LAB: Extracting DNA from Plants** Before DNA can be studied or manipulated it must be extracted from the cell. To obtain the DNA from a cell, barriers like the cell and nuclear membranes must be removed. Other cellular components must also be separated from the DNA. Follow the steps outlined in the following procedure. Answer the questions after the procedure has been performed. You can find the answers to most of the questions in your textbook or online.

**Sketch a simplified plant cell and label the DNA and the specific barriers and components mentioned above.**

**MATERIALS**

mortar & pestle

test tube holder

filter paper/ sieve

funnel

large test tube

paper towel

glass rod

2 beakers

small sieve

paper clip

hot plate

thermometer

electronic balance

salt solution

soap solution

meat tenderizer solution

35% isopropanol

banana, kiwi, strawberry

**PROCEDURE**

1. Put on safety goggles.

2. Obtain one large frozen strawberry. Place in mortar and crush using a pestle.

3. Transfer the crushed fruit to the large test tube.

5. Add 10 ml of 0.9% NaCl and mix well with a glass rod.

6. Add 3 ml of 10% soap solution and mix thoroughly for 30 seconds with the glass rod. Wash & dry the glass rod and set aside.

7. Place the test tube in a 60ºC water bath for 10 minutes.

8. Using test tube tongs, transfer the test tube to an ice water bath for 5 minutes.

9. Strain the fruit mixture into a clean beaker using a sieve for a first pass to remove large chunks. Then filter with filter paper or nylon mesh into a clean beaker or flask.

10. Once you have enough filtrate in the beaker, add about half that volume of meat tenderizer. Swirl to mix.

11. Pour mixture into a large test tube. Measure twice that volume of chilled ethanol. While holding the test tube on a slant, pour the ethanol carefully down the inside wall of the test tube.

12. Use the glass rod to twirl the DNA that has precipitated out (white, jelly-like substance) and remove from the mixture with forceps. If time permits, place onto slide and view under microscope.

**Extracting DNA Post-Lab Questions TI: /7 Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

***Answer all questions on this page in the spaces provided. Answers must be thorough and clearly explain the concept using specific vocabulary from the course. Diagrams may be included.***

1. Why do we need to crush the fruit?
2. What does adding the NaCl do?
3. What does adding the soap do?
4. What does the high temperature do?
5. What does the low temperature do?
6. What does the meat tenderizer do?
7. What does the ethanol do?